

Notice of Allowability

Application No.

09/898,259

Examiner

Christopher R. Magee

Applicant(s)

NAKASHIO ET AL.

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/12/2004.
2. ☒ The allowed claim(s) is/are 1-3, 5-8, 10 and 12 (renumbered 1-9, respectively).
3. ☒ The drawings filed on 03 July 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Response to Amendment

1. The reply filed 7/12/2004 was applied to the following effect: All relevant objections and rejections are withdrawn as being satisfied.

Reasons for Allowance

2. Claims 1-3, 5-8, 10 and 12 are allowed (renumbered 1-9, respectively).

The following is an examiner's statement of reasons for allowance:

This application is for a MAGNETIC TUNNEL EFFECT TYPE MAGNETIC HEAD, AND METHOD OF PRODUCING THE SAME.

- **Claims 1 and 6** specify a magnetic tunnel effect type magnetic head and producing the same, which requires:

“the metal oxide layer has a surface roughness of less than 0.2 nm in the center line average height Ra.”

Gill '178 does not show a metal oxide layer formed on the first soft magnetic conductive layer and the metal oxide layer disposed beneath the magnetic tunnel junction layer. On the other hand, Carey '761 teaches that a metal oxide layer 33' that is made from oxidizing a portion or all of a metal layer (col. 2, line; 41-55; col. 5, lines 11-42) and is disposed on the magnetic shield layer 34, which is preferably a NiFe alloy layer or other soft magnetic material(col. 4, lines 52-60; Fig. 2B). Neither Gill '178 nor Carey '761 teach or suggest a metal oxide layer having a

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surface roughness of less than 0.2 nm in the line average height Ra, as claimed in the present invention.

Therefore, this feature, in combination with other features of claims 1 and 6, is not anticipated by, nor made obvious over, the closest prior art of record of Gill (US 6,256,178) and/or Carey et al. (US 6,452,761)

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (703) 605-4256. The examiner can normally be reached on M-F, 8:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 15, 2004



Christopher R. Magee
Patent Examiner
Art Unit 2653



GEORGE J. LETSCHER
PRIMARY EXAMINER